

Pesticide Educational Resources Collaborative – Medical (PERC-med)

**4th Quarter Report: December 1, 2020 – February 28, 2021
Annual Report: March 1, 2020 – February 28, 2021**

Third Operational Year: 3/01/2020 – 2/28/2021

**Cooperative Agreement # X8-83935901
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PERC-med's Goal and Objective

The objective of the Pesticide Educational Resources Collaborative for Medical Professionals (PERC-med) is to help educate the medical community on how to prevent, recognize, and treat pesticide-related health conditions and build on the progress of a previous project titled, "From the Fields to the Exam Room: Integrating the Recognition, Management and Prevention of Pesticide Poisonings into the Primary Care Setting." This is complementary of the Environmental Protection Agency's Strategic Plan, Goal 1 – Core Mission, Objective 1.4 - Ensure Safety of Chemicals in the Marketplace: Effectively implement the Toxic Substances Control Act, and the Federal Insecticide, Fungicide, and Rodenticide Act.

PERC-med is a cooperative agreement (#X8-83935901) between the U.S. Environmental Protection Agency's Office of Pesticide Programs and University of California Davis Continuing and Professional Education, in collaboration with Oregon State University.

Submitted to:

U.S. Environmental Protection Agency
Office of Pesticide Programs

Submitted on March 31, 2021 by:

Suzanne Forsyth
PERC-med Administrator and PI

Program Highlights and Summary

Throughout Quarter 4, the PERC-med team has worked closely with marketing consultant Ann Marie O'Shea of AMOS & Advisors, LLC to accomplish numerous deliverables including:

- Delivering presentations and Continuing Medical / Nursing Education content
 - Oregon Pacific Area Health Education Center and Samaritan Health Services webinar "[COVID-19 and Pesticides: What providers need to know about disinfectants](#)" provided on December 15, 2020, presented in partnership with the National Pesticide Information Center (NPIC). The live webinar had 29 participants. The webinar [recording](#) has received 51 views.
 - National Nurse Led-Care Consortium (NNCC) webinar "[What do pesticides have to do with SARS-CoV-2?](#)" on January 27, 2021. Out of the 14,000 nurse practitioners who received the webinar announcement via NNCC's listserv, 120 nurse practitioners signed up to view the webinar and 80 nurse practitioners attended the webinar.
 - AgriSafe Nurse Scholar Program webinar "Pesticide Exposures and Healthcare Providers" recorded on February 11, 2021 as enduring content. AgriSafe aims to enroll at least 70 nurses in the program through February 2022. This is the third such webinar for the Nurse Scholars.
 - La Comunidad Hispana (LCH) collaboration was established leading to a health care provider training titled "Prevention, Recognition and Treatment of Pesticide-Related Illnesses" now scheduled for March 12, 2021. LCH is a Federally Qualified Health Center (FQHC) based in Pennsylvania with reach throughout the US.
 - Association of Public Health Nurses (APHN) Residency Program webinar titled "Pesticides: A Primer for the APHN New to Public Health Residency Program" will be recorded in March 2021 as enduring content for residents.
 - Association of Public Health Nurses (APHN) Annual Conference oral presentation by PERC-med will be given on April 20, 2021.
- Implementing a comprehensive marketing plan with deliverables, target markets, industry research and tactics, incorporating input from targeted end user groups.
- Working with clinicians and allied health professionals for input and feedback on content.
 - Finalized development of the Northwest PEHSU info sheets for acute and chronic pesticide exposure in children
 - Modified and improved original existing case studies and exercises developed by Pesticides Health Effects Medical Education Database (PHEMED) (provided by former PI of PHEMED, Matthew Keifer, MD, MPH)
 - Continuing development of the healthcare billing codes factsheet on pesticide specific codes
- Engaging with national health care provider audiences to promote PERC-med resources.
 - Establishing connections within membership-based organizations, such as the American Medical Association (AMA), American Academy of Family Physicians (AAFP), American Academy of Physician Assistants (AAPA), National Hispanic Medical Association (NHMA).
- Initiating and establishing partner collaborations.
 - Successful outreach to potential Advisory Board members, resulting in the onboarding of David Vearrier, MD, MPH to the Advisory Board
 - Communicating with Advisory Board members on partnering opportunities (marketing materials, presentations)
- Increasing PERC-med website views by 195.9% (13,078 additional views in Year 3 compared to Year 2).
 - Recommending website improvements and reviewing analytics.
 - Executing effective digital and media campaign ([LinkedIn](#)) and reviewing analytics.
 - Managing and marketing the PERC-med [listserv](#) with 32 subscribers.
- Preparing and distributing news releases:
 - Distributed Dr. Michael Yeh's news release announcing his appointment to the Advisory Board to 16 organizations

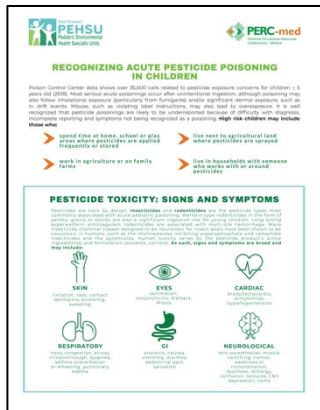
Pesticide Educational Resources Collaborative-Medical

- Drafted Dr. David Vearrier's news release announcing his appointment to the Advisory Board
- Drafted a news release for the Pesticide Reporting Map
- Drafted a news release for the OEHHHA collaboration on the national pesticide reporting module (expected to go live in March 2021)

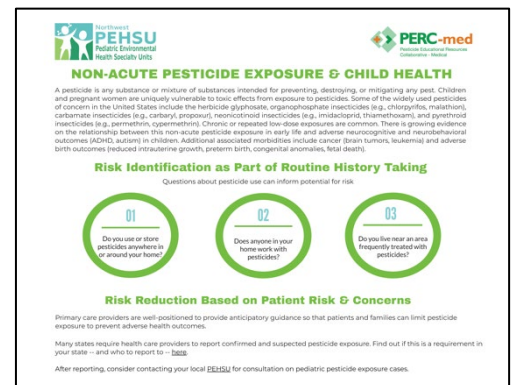
PERC-med has extended the agreement with Ann Marie O'Shea through August 2021. Ann Marie has been an invaluable source of support in meeting our project goals.

In addition to the presentations mentioned above, Advisory Board member Dr. Diane Rohlman gave a virtual presentation titled "Practical Tools for Promoting Farm Safety for Children" for RuralPrep Grand Rounds on January 28, 2021, and Kaci Buhl gave a virtual conference presentation titled "COVID-19, Pesticides, and the Healthcare Workforce" for [The Pesticide Stewardship Alliance](#) on February 02, 2021 (with approximately 130 viewers). Diana Simmes, Kaci Buhl, and Advisory Board members Dr. Jeff Jenkins and Dr. Fred Berman were each invited to present at the [Oregon Pesticide Symposium](#) in April 2021. Diana Simmes submitted an abstract for the [2021 Association of Public Health Nurses Virtual Conference](#) titled "COVID-19 and Pesticides: What Public Health Nurses Need to Know."

In January, Dr. David Vearrier formally joined the [PERC-med Advisory Board](#) (AB). Dr. Vearrier is board certified in medical toxicology, occupational medicine, and emergency medicine. Dr. Vearrier is the Chair of the Occupational and Environmental Toxicology Section of the American Academy of Clinical Toxicology and a Professor of Emergency Medicine and Preventive Medicine at the University of Mississippi Medical Center.



In collaboration with Northwest Pediatric Environmental Health Specialty Units (PEHSU), PERC-med completed the development of two fact sheets for health care providers titled, "[Recognizing Acute Pesticide Poisoning in Children](#)" and "[Non-acute Pesticide Exposure and Child Health](#)". The fact sheets are co-branded with NW PEHSU. The fact sheets have the potential for branding and distribution by the national PEHSU through AB member Catherine Karr, MD, MPH.



Website revisions in Quarter 4 include posting the above mentioned [fact sheets](#) created in collaboration with the Northwest PEHSU, creation of a new [Newsroom](#) webpage, updates to the [calendar of events](#) linking to past presentations where possible, and the addition of Dr. Vearrier's professional background to the Advisory Board webpage.

The following PERC-med projects are currently [in progress](#):

- Launching a nationally relevant reporting module for inclusion in the existing California OEHHHA Recognition, Management and Reporting of Pesticide Illness CME-accredited online [course](#).
- Finalizing an in-depth quality assurance check of the [pesticide reporting data table](#).
- Facilitating and supporting CME-accreditation for existing online pesticide education courses for healthcare providers in collaboration with the North Carolina Agromedicine Institute and the Eastern Area Health Education Center. This includes providing course content review by an AB member.
- Collaborating with national organizations to update pesticide-specific case studies in environmental medicine with Agency for Toxic Substances and Disease Registry (ATSDR) representatives.

- Partnership with the Association of Public Health Nurses (APHN) to provide pesticide education resources and a webinar for their public health nurse residency toolkit.
- Improving the pesticide illness case studies developed by PHEMED. Case studies of an aerial application of pesticides and an accidental ingestion of lice shampoo containing lindane have been updated and will be promoted and shared after Advisory Board review.

Objectives and Deliverables

Objective 1: Provide continuing education, training and technical assistance to relevant audiences.

Output A: Training sessions for medical professionals using old and new training models

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Track the number and nature of uses/contacts between medical professionals and the resources created and/or distributed. (Q1-Q4)	PERC-med has curated a set of accessible online resources that focus on pesticides and human health. Resources on the PERC-med website received 4,395 views in Quarter 4.	Track the number and nature of uses/contacts between medical professionals and the resources created and/or distributed. (Q1-Q4)
Track the number of webinars, presentations, or training sessions for medical professionals that are developed, delivered, or distributed by PERC-med. (Q4)	<p>PERC-med has led the following presentations and webinars with associated continuing education credit for medical professionals:</p> <ul style="list-style-type: none"> • AgriSafe Nurse Scholar Program webinar “Pesticide Exposures and Healthcare Providers” with associated CNE • CME-accredited webinar presented alongside NPIC for the Oregon Pacific Area Health Education Center and Samaritan Health “COVID-19 and Pesticides: What providers need to know about disinfectants” • CNE-accredited webinar for the National Nurse-led Care Consortium (NNCC) “What do pesticides have to do with SARS-CoV-2?” • Development of a live health care provider training session for La Comunidad Hispana (LCH) “Prevention, Recognition and Treatment of Pesticide-Related Illnesses” • Development of content for inclusion in the Association of Public Health Nurses (APHN) nursing residency program toolkit with associated CEU <p>PERC-med completed development of a nationally relevant pesticide reporting module to be included in the California OEHHA Recognition, Management and</p>	Track the number of webinars, presentations, or training sessions for medical professionals that are developed, delivered, or distributed by PERC-med. (Q4)

	<p>Reporting of Pesticide Illness course for health care providers. The module includes 1 CME credit as part of the larger OEHHA online course.</p> <p>PERC-med continues to work with the North Carolina Agromedicine Institute and the Eastern Area Health Education Center (AHEC) to provide technical assistance and revisions for two pesticide education courses targeted to health care providers.</p>	
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Output B: Accredited continuing education courses

Anticipated out-comes for Q4	Actual outcomes	Next quarter
	No deliverables at this time.	Track the number and nature of continuing education courses for medical professionals created and/or distributed. (Q1-Q3)

Output C: Training sessions for any/all stakeholders other than medical professionals

Anticipated out-comes for Q4	Actual outcomes	Next quarter
	No deliverables at this time.	Track the number of webinars/presentation s/training sessions for stakeholders other than medical professionals. (Q1-Q3)
Track the number and nature of uses/contacts between all stakeholders (health departments, medical associations, etc.) and the resources created and/or distributed. (Q1-Q4)	<p>PERC-med delivered the following training sessions and educational materials for stakeholders other than medical professionals:</p> <ol style="list-style-type: none"> Agency for Toxic Substances and Disease Registry (ATSDR) <ul style="list-style-type: none"> Continued collaboration on updates to the ATSDR case studies in environmental medicine. AgriSafe Network <ul style="list-style-type: none"> Diana Simmes presented as an expert guest lecturer for the 2021 AgriSafe Nurse Scholar program. AgriSafe aims to enroll at least 75 nurses in the program through February 2022. 	Track the number and nature of uses/contacts between all stakeholders (health departments, medical associations, etc.) and the resources created and/or distributed. (Q1-Q4)

	<ol style="list-style-type: none"> 3. American Academy of Family Physicians (AAFP) <ul style="list-style-type: none"> Continued outreach regarding opportunities for direct marketing and outreach to physician members 4. American Medical Association (AMA) <ul style="list-style-type: none"> PERC-med created a partnership with a medical student who sits on the AMA Council on Science and Public Health to share clinician and patient-facing resources. Resources were electronically provided to the AMA Council on Science and Public Health, the American Medical Association Facebook group (containing 3000+ members), and the American Medical Association Medical Student Section. 5. Association of Public Health Nurses (APHN) <ul style="list-style-type: none"> Continued partnership to include educational materials on disinfectants and antimicrobial pesticides in nurse residency toolkits. Continued development on webinar content for nurse residency program. 6. Center for Occupational and Environmental Health (COEH), University of California, Berkeley <ul style="list-style-type: none"> Final accreditation review of the PERC-med national reporting module for the OEHHA pesticide illness course. 7. Center for Online Education (COE), UC Davis Continuing and Professional Education <ul style="list-style-type: none"> Finalized development and production of a CME-accredited pesticide illness course. 8. Community Health Association of Mountain/Plains States (CHAMPS) <ul style="list-style-type: none"> Provided a list of upcoming opportunities for clinician education on pesticide-related illnesses. 9. Eastern Area Health Education Center (AHEC) <ul style="list-style-type: none"> Continued collaboration on CME-accredited pesticide illness course for health care providers. 10. Knights Landing One Health Center, Medical Clinic <ul style="list-style-type: none"> Provided clinician and patient-facing resources via partnership with 4th year medical student from UC Davis. Knights Landing One Health Center aims to provide culturally sensitive and linguistically competent healthcare services to the surrounding underserved rural community. 	
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	<p>11. La Comunidad Hispana (LCH)</p> <ul style="list-style-type: none"> • Development of a live training webinar for healthcare providers at this FQHC based in Pennsylvania. This is part of an initial effort to reach FQHCs. <p>12. National Nurse-led Care Consortium (NNCC)</p> <ul style="list-style-type: none"> • Diana Simmes presented a pesticide information webinar. Out of the 14,000 nurse practitioners who received the webinar announcement via NNCC's listserv, 120 nurse practitioners signed up to view the webinar and 80 nurse practitioners attended the webinar. <p>13. National Pesticide Information Center (NPIC)</p> <ul style="list-style-type: none"> • Diana Simmes collaborated as co-presenter with NPIC project coordinator, Amy Cross, on a pesticide disinfectants webinar hosted by Oregon Area Health Education Center and Samaritan Health. The live webinar had 29 participants. The webinar recording has received 51 views. • Maintained partnership for resource distribution. <p>14. North Carolina Agromedicine Institute</p> <ul style="list-style-type: none"> • Continued collaboration on CME-accredited pesticide illness course for health care providers. <p>15. Northwest Pediatric Environmental Health Specialty Unit (PEHSU)</p> <ul style="list-style-type: none"> • Collaboration to update pesticide illness recognition factsheet for pediatric providers. • Maintained partnership for resource distribution. <p>16. Occupational and Environmental Health, University of Iowa</p> <ul style="list-style-type: none"> • Provided updated resources and case studies for upcoming rural health and agricultural medicine graduate courses. Previously, 33 students from 14 different states were exposed to our resources through these courses. <p>17. Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (OEHHA)</p> <ul style="list-style-type: none"> • Continued collaboration on expansion of CME-accredited pesticide illness course for health care providers. <p>18. Oregon Area Health Education Center and Samaritan Health</p> <ul style="list-style-type: none"> • Diana Simmes presented a CME-accredited webinar alongside NPIC. See bullet 13 above for reach metrics. 	
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	<p>19. Pesticide Program Dialogue Committee (PPDC)</p> <ul style="list-style-type: none"> Kaci Buhl attended the PPDC workgroup committee for farmworker and clinician training. <p>20. RuralPrep Grand Rounds</p> <ul style="list-style-type: none"> Diane Rohlman gave a virtual presentation titled “Practical Tools for Promoting Farm Safety for Children”. <p>21. Sierra Sacramento Valley Medical Society (SSVMS)</p> <ul style="list-style-type: none"> Provided clinician and patient-facing resources via partnership with UC Davis medical student. SSVMS has nearly 6,000 members. <p>22. The Pesticide Stewardship Alliance (TPSA)</p> <ul style="list-style-type: none"> Kaci Buhl gave a virtual conference presentation titled “COVID-19, Pesticides, and the Healthcare Workforce” for The Pesticide Stewardship Alliance. Approximately 130 people were in attendance during Kaci’s presentation. 	
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Output D: A number of stakeholders receiving technical assistance to integrate the core skills into practice

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Track the number of stakeholders served with technical assistance to integrate the core skills into practice, for example, using apps, online modules and other tools. (Q1-Q4)	<p>PERC-med completed development of a nationally relevant module for inclusion in the OEHHHA pesticide illness course. The course module will go live in March 2021.</p> <p>Diana Simmes continued to provide technical non-emergency assistance for the NPIC as part of a formal agreement with Oregon State University.</p>	Track the number of stakeholders served with technical assistance to integrate the core skills into practice, for example, using apps, online modules and other tools. (Q1-Q4)

Objective 2: Update existing and/or develop new materials and resource tools.

Output A: A number of tested resources distributed to clinicians and other stakeholders

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Track the number of subscribers for email distribution list(s). (Q1-Q4)	PERC-med has moved our email distribution list to MailChimp to share information and updates. The number of listserv subscribers is 32.	Track the number of subscribers for email distribution list(s). (Q1-Q4)

Track the number of tested resources distributed. (Q4)	Please refer to Objective 1, Output A, Measure 2 (page 5).	Track the number of tested resources distributed. (Q4)
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Output B: A marketing plan that accompanies each resource and tool developed

Anticipated outcomes for Q4	Actual outcomes	Next quarter
Track milestones in developing a marketing strategy for PERC-med. (Q3, Q4)	<p>Marketing consultant, Ann Marie O'Shea, continues to implement the marketing strategy developed for PERC-med.</p> <p>Notably:</p> <ul style="list-style-type: none"> Initiated partnerships with national health care provider organizations, such as the National Nurse Led Care Consortium and La Comunidad Hispana, to promote PERC-med resources, Executed an effective digital and media campaign and measured reach Developed fact sheets, case studies and webinar presentations, and Investigated potential Advisory Board members, resulting in the onboarding of Dr. David Vearrier to the Advisory Board. <p>Note: PERC-med has extended the agreement with Ann Marie to remain as the expert marketing consultant through August 2021.</p>	Track milestones in developing a marketing strategy for PERC-med. (Q3, Q4)
Track milestones in developing and executing marketing activities for each resource and tool developed. (Q1-Q4)	<p>Marketing consultant has:</p> <ul style="list-style-type: none"> Established partner collaborations with the AMA, LCH, and NNCC, Recommended changes to website, which were subsequently implemented (updated calendar of events and posting of news releases and fact sheets) Managed the PERC-med LinkedIn page with continuous content Managed the PERC-med listserv via MailChimp Updated, designed and disseminated publications including: <ol style="list-style-type: none"> Dr. Yeh's news release (sent to 16 organizations) Fact sheets for Northwest PEHSU Updated Lindane case study diagram and exercise Updated Aerial Application case study diagram and exercise Drafted interactive pesticide reporting map news release Drafted OEHHHA course collaboration news release Drafted Dr. Vearrier's news release 	Track milestones in developing and executing marketing activities for each resource and tool developed. (Q1-Q4)

	<p>These groups continue to host PERC-med materials on their website:</p> <ul style="list-style-type: none"> • AgriSafe Network COVID-19 Ag Task Force (137 live webinar attendees) • AgriSafe Network Nurse Scholar Program (45 nurses) • Northwest Regional Primary Care Association (834 webpage views) 	
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Output C: One or more new resources developed each project year, such as mobile apps compatible with poisoning surveillance and monitoring systems to more easily report pesticide exposures, materials or resources that promote recognition, diagnosis, treatment and prevention of pesticide-related illness in the practice setting

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Track the number and nature of electronic-only resources developed, such as mobile apps, online courses, and/or databases. (Q1-Q4)	<p>PERC-med completed development of an online pesticide education module with CME-accreditation for insertion into the OEHHA pesticide course.</p> <p>In addition, PERC-med has developed and shared the following electronic resources:</p> <ul style="list-style-type: none"> • Two fact sheets on pesticide exposures in children • Reformatted two case studies of pesticide exposures • Webinars for a variety of organizations including the AgriSafe Nurse Scholars Program, National Nurse Led-Care Consortium (NNCC), Oregon Pacific Area Health Education Center and The Pesticide Stewardship Alliance. 	Track the number and nature of electronic-only resources developed, such as mobile apps, online courses, and/or databases. (Q1-Q4)
Track the number and nature of printable resources developed and/or improved such as clinical toxicology briefs, clinical guidelines and/or checklists. (Q1-Q4)	<p>This quarter, PERC-med developed printable resources:</p> <ul style="list-style-type: none"> • Health care provider fact sheets on pesticide exposures in children. • Reformatted case studies of pesticide exposures. 	Track the number and nature of printable resources developed and/or improved such as clinical toxicology briefs, clinical guidelines and/or checklists. (Q1-Q4)

Output D: A website that is updated and maintained for access to pesticide-related resources and links to partners and tools

Anticipated outcomes for Q4	Actual outcomes	Next quarter																												
Track milestones in maintaining/improving the website. (Q4)	<p>PERC-med enhanced its website by:</p> <ul style="list-style-type: none">• Addition of a Newsroom webpage with original PERC-med publications• Addition of a “Reporting” tab with drop-down options to the reporting map and data table.• Conducting a quality assurance check of the PERC-med data table containing pesticide illness reporting requirements by state• Updating the calendar with upcoming and completed events, and linking to content when possible• Updating Project Status webpage• Updating Advisory Board webpage with new and emeritus Advisory Board members• LinkedIn button to easily allow website visitors to view the PERC-med LinkedIn page• Adding resources throughout the year, particularly COVID-19 resources related to pesticide (disinfectant) exposures	Track milestones in maintaining/improving the website. (Q4)																												
Track reach / engagement using web analytics. (Q1-Q4)	<p>In Quarter 4, the PERC-med website and resources received the following page views:</p> <table><tr><th>PERC-med webpage</th><th>Views (this quarter)</th><th>Views (last quarter)</th><th>Comparison percentage</th></tr><tr><td>Website</td><td>4,395</td><td>7,617</td><td>-42.3%</td></tr><tr><td>Resources</td><td>2,855</td><td>5,366</td><td>-46.8%</td></tr><tr><td>Paraquat poisoning</td><td>18</td><td>18</td><td>0%</td></tr><tr><td>Respirator medical evaluation</td><td>164</td><td>156</td><td>+5.1%</td></tr><tr><td>Reporting pesticide exposures</td><td>1,800</td><td>4,001</td><td>-55.0%</td></tr><tr><td>COVID-19 article (including views on NWRPCA)</td><td>858</td><td>212 (in Q2; Q3 metrics unavailable)</td><td>+304.7% (Compared to Q2)</td></tr></table> <p>Please refer to Objective 2 Output D Measure 2 (page 29) for website and resource reach metrics comparison between Project Years 2 and 3.</p>	PERC-med webpage	Views (this quarter)	Views (last quarter)	Comparison percentage	Website	4,395	7,617	-42.3%	Resources	2,855	5,366	-46.8%	Paraquat poisoning	18	18	0%	Respirator medical evaluation	164	156	+5.1%	Reporting pesticide exposures	1,800	4,001	-55.0%	COVID-19 article (including views on NWRPCA)	858	212 (in Q2; Q3 metrics unavailable)	+304.7% (Compared to Q2)	Track reach / engagement using web analytics. (Q1-Q4)
PERC-med webpage	Views (this quarter)	Views (last quarter)	Comparison percentage																											
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Output E: Four or more pesticide-related articles (i.e. case studies, newsletter items, blogs, etc.) developed and/or distributed in relevant media each year, with estimated audiences

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Track the number of articles/pieces written/distributed annually. (Q4)	<ol style="list-style-type: none"> 1. In March 2020, PERC-med wrote the article What Do Pesticides Have to Do with SARS-CoV-2 and COVID-19? published on the NWRPCA website. In November 2020, PERC-med updated the article with data from a recent CDC Morbidity and Mortality Weekly Report: <i>Cleaning and Disinfectant Chemical Exposures and Temporal Associations with COVID-19</i>. 2. PERC-med finalized development of Northwest PEHSU fact sheets with Dr. Catherine Karr on children's acute and chronic exposure to pesticides. 3. PERC-med improved the PHEMED case study diagrams and exercises for: <ol style="list-style-type: none"> a. Ingested exposure to lindane lice shampoo, and b. Pesticide exposure via aerial application. 	Track the number of articles/pieces written/distributed annually. (Q4)
Track the approximate reach /engagement / audience for each article/piece. (Q4)	<ol style="list-style-type: none"> 1. Article "What Do Pesticides Have to Do with SARS-CoV-2 and COVID-19?" Reach = 858 total views (834 views on NWRPCA website; 24 views on the PERC-med website) 2. Fact sheet "Recognizing Acute Pesticide Poisoning in Children" published in late February 2021. Reach = 6 webpage views. Additional views are expected in the upcoming months. 3. Fact sheet "Non-acute Pesticide Exposure and Child Health" published in late February 2021. Reach = 5 webpage views. Additional views are expected in the upcoming months. 4. Lindane case study and exercise. Distributed to Advisory Board members for final review. 5. Aerial Application case study and exercise. Distributed to Advisory Board members for final review. 	Track the approximate reach / engagement/ audience for each article/piece. (Q4)

Output F: An evaluation strategy/plan to measure effectiveness of outreach activities and/or educational materials

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Track milestones in developing and executing marketing activities. (Q1-Q4)	<p>PERC-med's marketing consultant Ann Marie O'Shea continues to lead outreach activities. Ann Marie manages the PERC-med LinkedIn account to promote resources and upcoming events.</p> <p>Quarter 4 and Year 3 LinkedIn metrics are below:</p> <ul style="list-style-type: none"> • Posting: 26 times (Total in Year 3 = 38 posts) • Followers: 81 (Gained 33 additional followers in Q4) • Visitors: 97 (Total in Year 3 = 194 visitors) • Organic impressions: 701 (Total in Year 3 = 1,279) 	Track milestones in developing and executing marketing activities. (Q1-Q4)

Objective 3: Conduct outreach to existing and new audiences to use materials and tools.

Output A: A number of stakeholders accessing high-quality pesticide-related training materials

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Measure web traffic to PERC-med resource collections. (Q1-Q4)	PERC-med resources webpages received 2,855 views this quarter, totaling 13,041 views in Year 3.	Measure web traffic to PERC-med resource collections. (Q1-Q4)

Output B: A number of stakeholders receiving technical assistance on the availability of pesticide-related training materials

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Track the number of stakeholders served with technical assistance on the availability of pesticide-related training materials. (Q1-Q4)	Diana Simmes continued to provide technical non-emergency assistance for NPIC as part of a formal agreement.	Track the number of stakeholders served with technical assistance on the availability of pesticide-related training materials. (Q1-Q4)
Track the number and nature of partnerships to apply technical knowledge in practice. (Q1-Q4)	<p>PERC-med partnered with the following groups to produce and distribute content:</p> <ul style="list-style-type: none"> • Agency for Toxic Substances and Disease Registry (ATSDR) • Eastern AHEC • North Carolina Agromedicine Institute • Northwest PEHSU • Office of Environmental Health Hazard Assessment (OEHHA) • University of Iowa, Rural Health and Agricultural Medicine <p>Please refer to Objective 1, Output A, Measure 2 (page 5) for partnerships to provide presentations and webinars.</p>	Track the number and nature of partnerships to apply technical knowledge in practice. (Q1-Q4)

Objective 4: Develop partnerships and a sustainable network of stakeholders.**Output A: Two or more strategic meetings organized to promote the recognition, diagnosis, treatment and/or prevention of pesticide-related illness in medical practice settings**

Anticipated outcomes for Q4	Actual outcomes	Next quarter
Track engagement in collaborative resource-prioritization, planning, development, marketing and/or evaluation. (Q1-Q4)	<p>PERC-med held an Advisory Board meeting on January 26, 2021.</p> <p>Contributions by Advisory Board members in Quarter 4:</p> <ul style="list-style-type: none"> Charlotte Halverson – Reviewed modified case studies Dr. Catherine Karr – Developed NW PESHU pesticide fact sheets co-written with Maggie Willis, RN, and MaryKate Cardon, DNP trainee Dr. Ouahiba Laribi – Managed the OEHHA pesticide education course accreditation review process, led communication with course web host, and facilitated module approval from OEHHA's public health medical officer and executive office Dr. Diane Rohlman – Incorporated PERC-med case studies and resources in University of Iowa rural health curriculum; delivered presentation for RuralPREP Grand Rounds titled "Practical Tools for Promoting Farm Safety for Children" on January 28, 2021 Dr. James Roberts – In process of reviewing online pesticide education CME course Dr. Michael Yeh – Ongoing update of pesticide-specific case studies in environmental medicine for ATSDR 	Track engagement in collaborative resource-prioritization, planning, development, marketing and/or evaluation. (Q1-Q4)
Track the number and nature of strategic meetings attended throughout the year. (Q4)	<p>Strategic meetings attended throughout Year 3 include:</p> <ul style="list-style-type: none"> American Association of Pesticide Safety Educators (AAPSE) committee to address shortage of PPE (March 2020) Oregon Health Authority's calls with migrant and seasonal farmworker partners to gather information for COVID-19 response (March 2020) AgriSafe Network COVID-19 Ag Task Force (May 7, 2020) Oregon Department of Agriculture, Pesticide Analytical and Response Center (PARC) Board Meeting (May 20, 2020) The Pesticide Stewardship Alliance (February 2, 2021) U.S. EPA's Pesticide Program Dialogue Committee's Farmworker and Clinician Training Workgroup (February 12, 2021) 	Track the number and nature of strategic meetings attended throughout the year. (Q4)

Pesticide Educational Resources Collaborative-Medical

Track the number and nature of presentations delivered for/with key stakeholders. (Q4)	<p>PERC-med delivered presentations at the following events in Year 3:</p> <ul style="list-style-type: none"> • AgriSafe Network COVID-19 Ag Task Force on May 7, 2020 • Oregon Department of Agriculture, Pesticide Analytical and Response Center (PARC) Board Meeting on May 20, 2020 • Oregon Pacific Area Health Education Center webinar on December 15, 2020 • National Nurse Led-Care Consortium (NNCC) webinar on January 27, 2021 • The Pesticide Stewardship Alliance on February 2, 2021 • AgriSafe Nurse Scholar Program webinar on February 11, 2021 	Track the number and nature of presentations delivered for/with key stakeholders. (Q4)
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Output B: A number of new partnerships developed, and existing partnerships maintained, and the number of people involved in those partnerships

Anticipated outcomes for Q4	Actual outcomes	Next quarter
Track the number of partnerships and achievements initiated through outreach. (Q1-Q4)	<p>In Quarter 4, PERC-med developed and/or maintained partnerships with the following organizations:</p> <ul style="list-style-type: none"> • Agency for Toxic Substances and Disease Registry (ATSDR) • AgriSafe Network • American Medical Association (AMA) • Association of Public Health Nurses (APHN) • Community Health Association of Mountain/Plains States (CHAMPS) • Eastern Area Health Education Center (AHEC) • Knights Landing One Health Center, Medical Clinic • La Comunidad Hispana (LCH) • National Nurse-led Care Consortium (NNCC) • National Pesticide Information Center (NPIC) • North Carolina Agromedicine • Northwest Pediatric Environmental Health Specialty Unit (PEHSU) • Northwest Regional Primary Care Association (NWRPCA) • Occupational and Environmental Health, University of Iowa • Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (OEHHA) • Oregon Pacific Area Health Education Center and Samaritan Health • The Pesticide Stewardship Alliance (TPSA) 	Track the number of partnerships and achievements initiated through outreach. (Q1-Q4)

	<ul style="list-style-type: none"> U.S. EPA Pesticide Program Dialogue Committee (PPDC) Farmworker and Clinician Training Workgroup Washington Department of Health 	
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Output C: Planning and Reporting

Anticipated out-comes for Q4	Actual outcomes	Next quarter
Submit quarterly reports within 30 days of the close of the quarter.	<p>The third quarterly report for Year 3 was submitted within 30 days of the close of the quarter on December 18, 2020.</p> <p>This quarterly report includes a summary of expenditures, purchases, and other fiscal activities; a side-by-side comparison of actual accomplishments vs. project accomplishments; proposed timelines/milestones.</p>	Submit quarterly reports within 30 days of the close of the quarter.

Difficulties and Departures

Quarter 4: As with other EPA-sponsored UCD CPE cooperative agreements, the COVID-19 global pandemic has affected PERC-med activities. There were administrative challenges (e.g., delay in obtaining of signatures) with the execution of the memorandum of agreement with Eastern Area Health Education Center, which delayed timelines by approximately one month. Additionally, there have been challenges with the acceptance of conference abstracts. With conferences moving to virtual formats, the competition for limited space has increased. The PERC-med abstract was not accepted for presentation at the Virtual Forum for Migrant and Community Health to take place in March 2021. PERC-med will continue to seek out relevant conference and other opportunities to reach healthcare provider target audiences.

Sub-Awards, Contracts, and Other Agreements

Quarter 4: As part of its project proposal, UCD CPE named Oregon State University as a collaborator and therefore was not required to compete this sub-award further. Kaci Buhl serves as the Principal Investigator. The total for Project Year 2020 (Year 3) was budgeted at \$50,000. We received and paid for invoices for Q1-3 totaling \$34,884.97. We have not yet received an invoice from OSU for Q4 but we will report the amount in a future report once we receive and pay it.

Table 1: Amended Annual Budget with Final Carryover - Project Year Two (2019) to Project Year Three (2020)

Project Year 2020	Original Budget	Carryover Applied from Project Year 2019	Amended Budget
A. Personnel	\$140,365	\$116,269	\$256,634
B. Benefits	\$79,863	\$61,337	\$141,200
C. Travel	\$6,338	\$5,017	\$11,355
D. Equipment	\$0	\$0	\$0
E. Program Supplies	\$1,000	\$2,956	\$3,956
F. Contractual	\$27,933	\$82,000	\$109,933
G. Construction	\$0	\$0	\$0
H. Other	\$39,092	\$71,960	\$111,052
H. Other (indirect exempt)	\$58,114	\$47,350	\$105,465
Total Direct Costs	\$352,705	\$386,889	\$739,594
Total Modified Direct Costs (MTDC)	\$294,591	\$364,538	\$659,128
I. Indirect Costs	\$147,295	\$197,215	\$344,510
Total Expenses:	\$500,000	\$584,104	\$1,084,104

Table 2: Quarter 4 Expenditures – Project Year Three (2020)

Project Year Three (2020)	Qtr 4 Actual	Amended Budget from above	% Used of Amended
A. Personnel	\$30,074	\$256,634	11.72%
B. Benefits	\$11,430	\$141,200	8.09%
C. Travel	\$0	\$11,355	0%
D. Equipment	\$0	\$0	--
E. Program Supplies	\$0	\$3,956	0%
F. Contractual	\$13,247	\$109,933	12.05%
G. Construction	\$0	\$0	--
H. Other	\$0	\$111,052	0%
H. Other (indirect exempt)	\$11,407	\$105,465	10.82%
Total Direct Costs	\$66,158	\$739,594	8.95%
Total Modified Direct Costs (MTDC)	\$54,750	\$659,128	8.31%
I. Indirect Costs	\$27,375	\$344,510	7.95%
Total Expenses:	\$95,533	\$1,084,104	8.81%

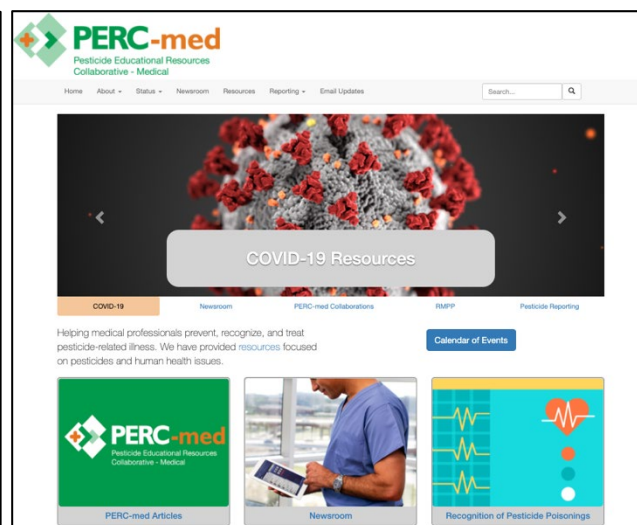
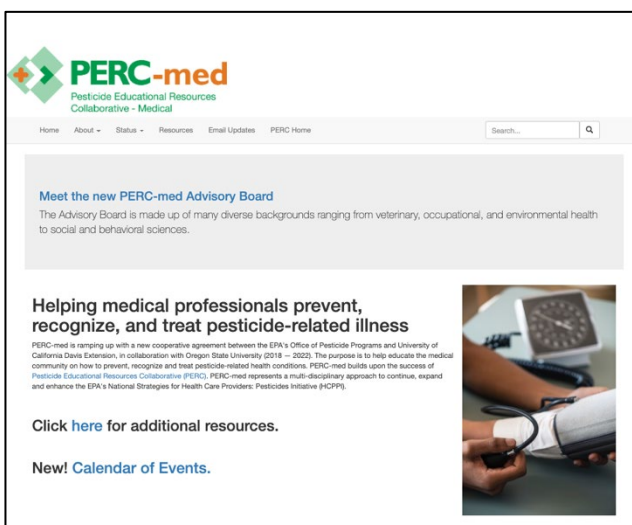
The carryover from Project Year Two to Project Year Three is final and is reported above in Table 1.

Table 2 reports that resources used in Q4 are \$95,533 representing 8.81% of the amended award amount for Project Year 2020 (Year Three.) Additional direct expenses for Q4 will post in Year 4/Q1 and will be reflected in subsequent drawdowns and quarterly reports.

Project Year 3 Program Highlights and Summary

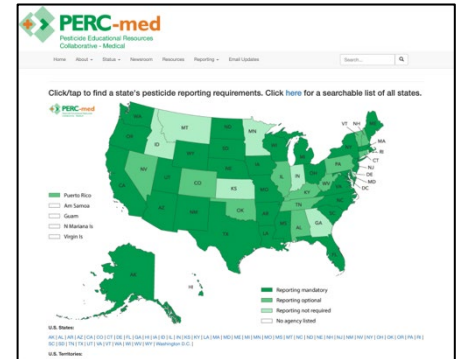
• March – May 2020

- Diana and Kaci participated in the Oregon Health Authority's calls with Migrant and Seasonal Farmworker Partners to gather information that can better inform our COVID-19 response.
- Kaci led an ad hoc committee meeting for the American Association of Pesticide Safety Educators ([AAPSE](#)) to develop a set of [talking points](#), which resulted in a [publication](#).
- Kaci organized two nationwide calls to better understand the apparent lack of available PPE for pesticide applicators. She worked with the National Association of State Departments of Agriculture (NASDA) to advocate on behalf of agricultural workers who need respiratory protection.
- Significant improvements were made to [PERC-med's website](#) for user accessibility, including adding webpages categorized by resource type, developing and adding pesticide illness reporting requirements by state in a [map](#) and [data table](#) form, adding a banner highlighting resources, collaborations, pesticide reporting requirements, and a compilation of [COVID-19 resources](#).
- Kaci presented "Lacking PPE for Pesticides" to the COVID-19 Ag Task Force, organized by the AgriSafe Network and sponsored by the Central States Center for Agricultural Safety and Health (CS-CASH).
- Diana and Kaci presented to the Oregon Department of Agriculture, Pesticide Analytical and Response Center ([PARC](#)) Board. Diana gave a presentation demonstrating PERC-med's new pesticide exposure reporting requirements [map](#) and [data table](#). Kaci's presentation described the PPE shortage experienced by pesticide applicators and offered alternative PPE options under the Worker Protection Standard.



• June – August 2020

- PERC-med recruited a new advisory board member, Dr. James R. Roberts, Department of Pediatrics, Medical University of South Carolina (MUSC). His research interests include children's environmental exposures and vaccine delivery. Notably, Dr. Roberts is co-author of the [Recognition and Management of Pesticide Poisonings](#), 5th and 6th editions.
- PERC-med hired a marketing consultant, Ann Marie O'Shea, President and CEO of AMOS & Advisors, LLC. Ann Marie has a background in marketing, marketing administration, and healthcare management.
- In collaboration with UC Davis Continuing and Professional Education's Center for Online Education, the PERC-med national pesticide reporting [map](#) was updated to reflect requirements by state in a gradient color scheme for easy navigation. This will be incorporated as an interactive feature in the Office of Environmental Health Hazard Assessment's (OEHHA) pesticide illness course for health care providers.



• September – November 2020

- Ann Marie worked closely with the PERC-med team to accomplish numerous deliverables.
- Collaborations were established for future CME/CNE-accredited webinar presentations led by PERC-med, including partnerships with the Association of Public Health Nurses, the National Nurse-led Care Consortium, and the Oregon Area Health Education Center.
- PERC-med interviewed with Katy Wilcoxon, U.S. EPA Region 9, regarding work with the Indian Health Service per the suggestion of the Project Officer, Jennifer Park.
- PERC-med recruited new Advisory Board member Dr. Michael Yeh, Medical Toxicology Fellow at Emory University and the Centers for Disease Control and Prevention (CDC). Dr. Yeh is working on updating a series of ATSDR case studies focusing on cholinesterase inhibitors alongside advisory board member Dr. Catherine Karr through a partnership with PERC-med.

Project Year 3 Objectives and Deliverables

Objective 1: Provide continuing education, training and technical assistance to relevant audiences.

Output A: Training sessions for medical professionals using old and new training models

Anticipated outcomes	Actual outcomes
Track the number and nature of uses/contacts between medical professionals and the resources created and/or distributed.	PERC-med has curated a set of accessible online resources that focus on pesticides and human health. The PERC-med webpage received 19,753 views this project period, an increase of 195.9% compared to last year (6,675 views in Year 2).
Track the number of webinars, presentations, or training sessions for medical professionals that are developed, delivered, or distributed by PERC-med.	Quarter 3: PERC-med developed content for inclusion in the Association of Public Health Nurses (APHN) residency toolkit. Content will be further developed into clickable modules and will have associated CEU.

Output B: Accredited continuing education courses

Anticipated outcomes	Actual outcomes
Track the number and nature of continuing education courses for medical professionals created and/or distributed.	Quarter 1 & 2: PERC-med collaborated on a national-scope pesticide reporting module to be included in the California OEHHA Recognition, Management and Reporting of Pesticide Illness course for health care providers. The module will include CME-accreditation as part of the larger course. Quarter 3: PERC-med finalized negotiations with North Carolina Agromedicine Institute and the Eastern Area Health Education Center (AHEC) to provide technical assistance with revisions and updates for new CME / CNE accreditation on two pesticide education courses. AHEC has begun work on this project.

Output C: Training sessions for any/all stakeholders other than medical professionals

Anticipated outcomes	Actual outcomes
Track the number of webinars/presentations/training sessions for stakeholders other than medical professionals.	Quarter 1: In March, Kaci Buhl organized two nationwide calls with the American Association of Pesticide Safety Educators (AAPSE) committee to develop a set of PPE talking points , which resulted in a publication . In May, Kaci Buhl participated in calls with national experts in an effort to procure PPE for agricultural operations, resulting in a drafted letter to the COVID-19 Task Force leader, United States Vice President, Mike Pence,

	<p>and the Secretary of Agriculture, Sonny Perdue. They worked with the National Association of State Departments of Agriculture (NASDA) to advocate on behalf of agricultural workers who need respiratory protection in order to feed the nation. Executive Director Barb Glenn signed the letter in late April, and the group was reconvened on May 1 to respond to follow-up questions from members of the Task Force.</p> <p>On May 7, Kaci Buhl served as a speaker/contributor to the COVID-19 Ag Task Force, organized by the AgriSafe Network and sponsored by the Central States Center for Agricultural Safety and Health (CS-CASH). Her presentation, “Lacking PPE for Pesticides” explained why some pesticides require respirators, while others do not. She helped agricultural safety professionals anticipate cropping systems that will need respirators and identify local experts to get involved in the effort.</p> <p>On May 20, Diana Simmes and Kaci Buhl each participated as presenters to the Oregon Department of Agriculture Pesticide Analytical and Response Center (PARC) Board. Diana Simmes gave a 30-minute presentation introducing PERC-med to the PARC Board. Kaci Buhl’s presentation described the PPE shortage experienced by pesticide applicators and offered alternative PPE options under the WPS.</p> <p>Quarter 3:</p> <p>In November, Kaci Buhl gave a presentation on PPE during COVID-19 at the Willamette Valley Ag Expo (with over 600 in attendance).</p>
<p>Track the number and nature of uses/contacts between all stakeholders (health departments, medical associations, etc.) and the resources created and/or distributed.</p>	<p>Direct contacts were made among stakeholder groups including:</p> <ol style="list-style-type: none"> 1. Agency for Toxic Substances and Disease Registry (ATSDR) <ul style="list-style-type: none"> • Meeting to discuss potential project with the ATSDR Case Studies in Environmental Medicine. • Email correspondence with draft updates to the ATSDR case studies in environmental medicine. 2. AgriSafe Network <ul style="list-style-type: none"> • Kaci Buhl contributed a webinar presentation titled, “Lacking PPE for Pesticides” for the COVID-19 Ag Task Force Think Tank series (137 attendees). • AgriSafe hosted a webinar titled “Pesticide Exposures and Healthcare Providers” presented by Diana Simmes for the AgriSafe Nurse Scholar Program (attended by 45 nurses). • AgriSafe posted PERC-med’s paraquat poisoning information sheet in the AgriSafe Nurse Scholar Program’s learning lab. • Developed a partnership for resource distribution. • Diana Simmes accepted invitation to present as an expert guest lecturer for the 2021 AgriSafe Nurse Scholar program (projected attendance is 75 nurses). • Via LinkedIn, PERC-med marketed Advisory Board member Charlotte Halverson’s AgriSafe webinar titled, “Train the Trainer: Cover Up! Head to Toe Personal Protective Equipment”.

	<ol style="list-style-type: none"> 3. American Academy of Family Physicians (AAFP) <ul style="list-style-type: none"> Diana Simmes met with AAFP regarding opportunities for direct marketing and outreach to the AAFP clinical membership through paid direct member marketing channels. Ann Marie O'Shea, marketing consultant for PERC-med, connected with AAFP about opportunities for direct marketing and outreach. 4. American Association of Pesticide Safety Educators (AAPSE) <ul style="list-style-type: none"> Kaci Buhl organized two nationwide calls with the AAPSE committee to develop a set of PPE talking points, which resulted in a publication. Collaborated to promote the PERC-med pesticide reporting requirements map via an AAPSE listserv announcement. 5. American Association of Poison Control Centers (AAPCC) <ul style="list-style-type: none"> Communicated on disinfectant exposure data, particularly in rural areas. Distributed the PERC-med article on pesticides and COVID-19. 6. American Medical Association (AMA) <ul style="list-style-type: none"> Ann Marie O'Shea reached out to AMA regarding opportunities for direct marketing and outreach. 7. Association of Public Health Nurses (APHN) <ul style="list-style-type: none"> Communicated regularly regarding conference presentation. Developed and continued partnership to include educational materials on disinfectants and antimicrobial pesticides in nurse residency toolkits. Submitted webinar materials for nurse residency toolkits. 8. Collaborative for Rural Primary care, Research, Education and Practice (Rural PREP) <ul style="list-style-type: none"> Communication regarding resource distribution around COVID-19. 9. Community Health Association of Mountain/Plains States (CHAMPS) <ul style="list-style-type: none"> Developed a partnership for resource distribution. 10. Eastern Area Health Education Center (AHEC) <ul style="list-style-type: none"> Collaboration on CME-accredited pesticide illness course for medical providers. 11. Kashia Band of Pomo Indians <ul style="list-style-type: none"> Collaboration with Nina Hapner, Director of Environmental Planning, Kashia Band of Pomo Indians, conducting outreach on medical provider needs in tribal health care settings. 12. National Environmental Education Foundation (NEEF) <ul style="list-style-type: none"> Communication regarding potential collaboration in children's health symposium and request to share marketing solicitation nationwide.
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	<p>13. National Nurse Led Care Consortium (NNCC)</p> <ul style="list-style-type: none"> • Communication regarding current nurse training and activities related to pesticides • Developed a partnership for resource distribution to nurse practitioners. • Scheduled Diana Simmes to present a pesticide information webinar in January 2021 (Circulated to 14,000 nurse practitioners via NNCC's listserv, 120 nurse practitioners signed up to view and 80 nurse practitioners attended) • Provided public education materials and pesticides in home infographic for potential usage in the NNCC's Safe and Healthy Homes program. <p>14. National Pesticide Information Center (NPIC)</p> <ul style="list-style-type: none"> • PERC-med met with NPIC's Project Coordinator to discuss navigating the NPIC Product Research Online (NPRO) tool and EPA's List N from EPA to confirm disinfectant products effective against SARS-CoV-2, the virus that causes COVID-19. • NPIC project coordinator, Amy Cross, shared Oregon Poison Center data for Oregon exposures to bleach, disinfectants, and hand sanitizers. • Diana Simmes collaborated on a webinar titled "Disinfectant Safety for Medical Professionals" hosted by Oregon Area Health Education Center in December. The webinar will be CME-accredited. The live webinar had 29 participants. The webinar recording has received 51 views. • Maintained partnership for resource distribution. <p>15. North Carolina Agromedicine Institute</p> <ul style="list-style-type: none"> • Collaboration on CME-accredited pesticide illness course for medical and health care providers. <p>16. Northwest Pediatric Environmental Health Specialty Unit (PEHSU)</p> <ul style="list-style-type: none"> • Collaboration on updating pesticide illness recognition fact sheet for pediatric providers. • Maintained a partnership for resource distribution. <p>17. Northwest Regional Primary Care Association (NWRPCA)</p> <ul style="list-style-type: none"> • PERC-med authored article was published on the NWRPCA website. The article was circulated to 1,400 community health center personnel including clinicians via NWRPCA's listserv. • Communication regarding PERC-med online resources. • PERC-med updated the March 2020 article, "What do Pesticides have to do with SARS-CoV-2 and COVID-19?" published by NWRPCA. The updated article has been posted by NWRPCA. • Diana Simmes submitted an abstract to present at the 2021 Virtual Form for Migrant and Community Health, co-hosted by NWRPCA. • Maintained a partnership for resource distribution. <p>18. Occupational and Environmental Health, University of Iowa</p> <ul style="list-style-type: none"> • Provided resources for the rural health and agricultural medicine summer course to 25 attendees from 14 states.
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	<ul style="list-style-type: none"> • Provided technical assistance with pesticide exposure case studies. • Contributed feedback to 8 rural / ag health graduate students, which included 2 medical providers, on development of pesticide exposure interventions • Maintained partnership to provide resources and case studies for rural health and agricultural medicine courses. <p>19. Office of Continuing Medical Education, UC Irvine School of Medicine</p> <ul style="list-style-type: none"> • Communication regarding continuing medical education units. <p>20. Office of Environmental Health Hazard Assessment (OEHHA), California</p> <ul style="list-style-type: none"> • Communication regarding collaboration on expansion of CME-accredited pesticide illness course for medical providers. • Collaboration on expansion of CME-accredited pesticide illness course for health care providers. <p>21. Oregon Department of Agriculture, Pesticide Analytical and Response Center (PARC)</p> <ul style="list-style-type: none"> • Diana Simmes and Kaci Buhl each participated as presenters to the PARC Board (17 attendees). <p>22. Oregon Health Authority (OHA)</p> <ul style="list-style-type: none"> • Participated in OHA calls on migrant and seasonal farmworker partners and COVID-19. • Communication on pesticide reporting requirements with Pesticide Exposure, Safety, and Tracking (PEST) Program coordinator Crystal Weston. • Key informant communication with toxicologist David Farrer. • Promoted PERC-med resources. <p>23. Oregon Poison Center (serving Oregon, Alaska and Guam) / Oregon Health & Science University (OHSU)</p> <ul style="list-style-type: none"> • Provided technical assistance. • Maintained partnership for resource distribution. <p>24. Pesticide Program Dialogue Committee (PPDC)</p> <ul style="list-style-type: none"> • Kaci Buhl applied to the PPDC workgroup committee for farmworker and clinician training. <p>25. Tribal Pesticide Program Council (TPPC)</p> <ul style="list-style-type: none"> • PERC-med received accolades at the TPPC Spring Meeting during the tribal feature presented by Nina Hapner. Consequently, several tribes were interested in the NEETF National Pesticide Competency Guidelines for Medical & Nursing Education. A Navajo Nation member also expressed interest in doing outreach similar to PERC-med's work with the Kashia Band of Pomo Indians. <p>26. UC Davis Continuing and Professional Education</p> <ul style="list-style-type: none"> • Business, Health and Leadership Department <ul style="list-style-type: none"> ○ Communicated regarding marketing outreach.
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	<ul style="list-style-type: none"> • Center for Online Education <ul style="list-style-type: none"> ○ Collaboration on CME-accredited pesticide illness course for medical providers. ○ Collaborated on production of a CME-accredited pesticide illness course for health care providers. ○ Developed and produced a CME-accredited pesticide illness course for health care providers. • Center for Occupational and Environmental Health <ul style="list-style-type: none"> ○ Accreditation review of the PERC-med module for the OEHHA pesticide illness course for health care providers. • Environmental Health Science Center <ul style="list-style-type: none"> ○ Discussed potential collaboration. <p>27. U.S. EPA, Region 9</p> <ul style="list-style-type: none"> • Conducted key informant interview with Katy Wilcoxon, EPA Region 9, regarding their work with the Indian Health Service. <p>28. Washington Department of Health</p> <ul style="list-style-type: none"> • Discussed the increasing exposures to disinfectant foggers. • Referred colleagues to national data sources.
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Output D: A number of stakeholders receiving technical assistance to integrate the core skills into practice

Anticipated outcomes	Actual outcomes
Track the number of stakeholders served with technical assistance to integrate the core skills into practice, for example, using apps, online modules and other tools.	<p>In March, Diana Simmes provided technical assistance to the Oregon Poison Center (OPC) Director regarding identifying disinfectants effective against COVID-19. The director's question was in response to a health care provider who called the OPC for guidance on a specific disinfectant.</p> <p>In April, Diana Simmes provided University of Iowa professor, Diane Rohlman, with pesticide exposure case studies for graduate students and medical providers taking her Rural Health course to hone their skills in designing pesticide exposure prevention interventions. Diana Simmes and Rebecca Beloso participated in the presentations as reviewers and provided feedback to the students.</p> <p>PERC-med developed a storyboard for inclusion in the OEHHA pesticide illness course for medical providers. PERC-med and UC Davis Continuing and Professional Education's Center for Online Education have updated the national pesticide reporting map for interactive use in the module.</p> <p>PERC-med's module storyboard for inclusion in the OEHHA pesticide illness course for medical providers was approved by the OEHHA Executive Office. The module has passed a CME-accreditation review by UC Berkeley's Center for Occupational and Environmental Health (COEH). UC Davis Continuing and Professional Education's Center for Online Education (COE) has begun course module development.</p>

Objective 2: Update existing and/or develop new materials and resource tools.

Output A: A number of tested resources distributed to clinicians and other stakeholders

Anticipated outcomes	Actual outcomes
Track the number of subscribers for email distribution list(s).	PERC-med has moved our email distribution list to MailChimp to share information and updates.
Track the number of tested resources distributed.	Quarters 1 through 3 had no deliverables during this time.

Output B: A marketing plan that accompanies each resource and tool developed

Anticipated outcomes	Actual outcomes
Track milestones in developing a marketing strategy for PERC-med.	<p>PERC-med developed a solicitation to hire a part-time marketing professional. In August, PERC-med hired Ann Marie O'Shea with AMOS & Advisors, LLC as a part-time marketing strategist. Ann Marie is developing a marketing strategy to reach the mission and goals of PERC-med.</p> <p>In Quarter 3, marketing consultant, Ann Marie O'Shea, continued to implement the marketing strategy she developed for PERC-med.</p> <p>Notably, she has:</p> <ul style="list-style-type: none"> • engaged with national health care provider audiences to promote PERC-med resources, • executed effective digital and media campaign, • formatted visuals, and • published PERC-med materials, and measured reach analytics.
Track milestones in developing and executing marketing activities for each resource and tool developed.	<p>The following groups have PERC-med materials available on their website:</p> <ul style="list-style-type: none"> • AgriSafe Network COVID-19 Ag Task Force • AgriSafe Network Nurse Scholar Program • Northwest Regional Primary Care Association <p>PERC-med partnered with the NW PEHSU to update a factsheet for clinical providers on pesticide exposure in children. Advisory Board member Dr. Catherine Karr began reviewing literature for fact sheet development. Dr. Karr also began additional focused activities on safe use of disinfectants as part of the PEHSU program, given rise in adverse incidents since COVID-19.</p> <p>Advisory Board member Charlotte Halverson provided agricultural producers with PERC-med resources specific to information on worker protection standard and general information for employers.</p> <p>Advisory Board member Dr. Diane Rohlman promoted PERC-med resources in a Rural Health and Agricultural Medicine course titled "Agricultural Safety and Health: The Core Course." The course took place virtually through the University of Iowa. Attendance included 25 people from 14 states.</p>

	<p>In Quarter 3, marketing consultant, Ann Marie O'Shea:</p> <ul style="list-style-type: none"> • Initiated and established partner collaborations • Recommended changes to website, which were implemented • Developed a PERC-med LinkedIn page • Moved the PERC-med listserv to MailChimp • Updated, designed, and disseminated publications including: <ol style="list-style-type: none"> 1. PERC-med original article, "What do pesticides have to do with SARS-CoV-2 and COVID-19?" 2. Dr. Roberts' news release 3. Dr. Yeh's news release 4. Developing a new release about PERC-med's Interactive Pesticide Reporting Map 5. Developing infographic layout for Dr. Karr's PEHSU info sheet 6. Updating Lindane Case Study diagram and exercise
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Output C: One or more new resources developed each project year, such as mobile apps compatible with poisoning surveillance and monitoring systems to more easily report pesticide exposures, materials or resources that promote recognition, diagnosis, treatment and prevention of pesticide-related illness in the practice setting

Anticipated outcomes	Actual outcomes
Track the number and nature of electronic-only resources developed, such as mobile apps, online courses, and/or databases.	<p>PERC-med developed the following electronic-only resources:</p> <ul style="list-style-type: none"> • National pesticide exposure reporting requirements interactive map and data table • Compilation of COVID-19 information for health care providers, including infographics, guidance, and one-page tip-sheets, with emphasis on disinfectant safety topics • Compilation of data sets for medical professionals to research pesticide-related topics • Collection of pesticide exposure assessment tools, including screening forms, evaluations, and guidelines for medical professionals • Collection of training opportunities for medical professionals, some offering continuing medical education units • EPA's Recognition and Management of Pesticide Poisonings handbook listed by chapter • PERC-med authored a featured article for the Northwest Regional Primary Care Association, titled "What Do Pesticides Have to Do with SARS-CoV-2 and COVID-19?" <p>PERC-med developed a storyboard for inclusion into the OEHHA pesticide illness course for medical providers. In collaboration with UC Davis Continuing and Professional Education's Center for Online Education, PERC-med updated the national pesticide reporting requirements map. The updated map will be incorporated as an interactive feature in the OEHHA module for health care providers.</p>

Track the number and nature of printable resources developed and/or improved such as clinical toxicology briefs, clinical guidelines and/or checklists.	<p>PERC-med partnered with the following organizations to develop printable resources:</p> <ul style="list-style-type: none"> Northwest Pediatric Environmental Health Specialty Unit (PEHSU) to develop a health care provider fact sheet on recognition, management, and prevention of pesticide poisoning in children. This project will be led by Advisory Board member Dr. Catherine Karr. Agency for Toxic Substances and Disease Registry (ATSDR) to update clinician briefs in environmental medicine. A draft outline has been developed by Dr. Michael Yeh and Dr. Catherine Karr. Case studies from Dr. Keifer's PHEMED have been reformatted for distribution.
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Output D: A website that is updated and maintained for access to pesticide-related resources and links to partners and tools

Anticipated outcomes	Actual outcomes																								
Track milestones in maintaining/improving the website.	<p>PERC-med significantly updated its website for user accessibility including:</p> <ul style="list-style-type: none">• adding webpages categorized by resource type,• developing and adding pesticide illness reporting requirements by state in a map and table form,• adding a webpage banner highlighting resources, collaborations, upcoming events, and pesticide reporting requirements, and• adding a compilation of COVID-19 resources. <p>In Quarter 2, PERC-med updated its national pesticide reporting requirements map. The data table containing pesticide illness reporting requirements by state underwent a quality assurance check.</p> <p>In Quarter 3, updates were made to the website including the addition of a Newsroom webpage and a “Reporting” tab with drop-down options to the reporting map and data table.</p>																								
Track reach / engagement using web analytics.	<p>PERC-med’s website received the following page views for Project Year 3:</p> <table><tr><th>PERC-med webpage</th><th>Views (GY3)</th><th>Views (GY2)</th><th>Comparison percentage</th></tr><tr><td>Website</td><td>19,753</td><td>6,675</td><td>+195.9%</td></tr><tr><td>Resources</td><td>13,041</td><td>841</td><td>+1,450.7%</td></tr><tr><td>Paraquat poisoning</td><td>83</td><td>93</td><td>-10.8%</td></tr><tr><td>Respirator medical evaluation</td><td>835</td><td>24</td><td>+3,379.2%</td></tr><tr><td>Reporting pesticide exposures</td><td>9,040</td><td>Resource did not exist</td><td>Not applicable</td></tr></table>	PERC-med webpage	Views (GY3)	Views (GY2)	Comparison percentage	Website	19,753	6,675	+195.9%	Resources	13,041	841	+1,450.7%	Paraquat poisoning	83	93	-10.8%	Respirator medical evaluation	835	24	+3,379.2%	Reporting pesticide exposures	9,040	Resource did not exist	Not applicable
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Output E: Four or more pesticide-related articles (i.e. case studies, newsletter items, blogs, etc.) developed and/or distributed in relevant media each year, with estimated audiences

Anticipated outcomes	Actual outcomes
Track the number of articles/pieces written/distributed annually.	In Quarter 1, PERC-med authored a featured article for the Northwest Regional Primary Care Association titled, " What Do Pesticides Have to Do with SARS-CoV-2 and COVID-19? " In Quarter 3, the article was updated with data from a recent CDC Morbidity and Mortality Weekly Report: <i>Cleaning and Disinfectant Chemical Exposures and Temporal Associations with COVID-19</i> .
Track the approximate reach /engagement / audience for each article/piece.	In Quarter 2, the article written by PERC-med for a NWRPCA newsletter titled, " What Do Pesticides Have to Do with SARS-CoV-2 and COVID-19? " circulated to about 1,400 community health center personnel including clinicians. As of July 14, 2020, the article received 212 total page views with an average visit duration of 3.28 minutes.

Output F: An evaluation strategy/plan to measure effectiveness of outreach activities and/or educational materials

Anticipated outcomes	Actual outcomes
Track milestones in developing and executing marketing activities.	<p>PERC-med materials were posted as resources on partner organization webpages including:</p> <ul style="list-style-type: none"> • A featured article for the Northwest Regional Primary Care Association titled, "What Do Pesticides Have to Do with SARS-CoV-2 and COVID-19?" • A webinar titled "Pesticide Exposures and Healthcare Providers" presented by Diana Simmes for the AgriSafe Nurse Scholar Program. • PERC-med's paraquat poisoning information sheet posted on the AgriSafe Nurse Scholar Program's learning lab. <p>In Quarter 2, PERC-med hired a part-time marketing consultant, Ann Marie O'Shea with AMOS & Advisors, LLC, to lead marketing activities. Ann Marie developed a marketing strategy for PERC-med. In Quarter 3, Ann Marie worked with the PERC-med team to significantly update the website for easy navigation. She also created a LinkedIn account to promote PERC-med resources and upcoming events.</p>

Objective 3: Conduct outreach to existing and new audiences to use materials and tools.**Output A: A number of stakeholders accessing high-quality pesticide-related training materials**

Anticipated outcomes	Actual outcomes
Measure web traffic to PERC-med resource collections.	<p>The PERC-med resource webpages received 13,041 views in Project Year 3.</p> <p>This count includes individual resource webpages:</p> <ul style="list-style-type: none"> • PERC-med Articles • Databases • Educational Materials • Newsroom • Pesticide Exposure Assessment • Pesticide Reporting Data Table • Pesticide Reporting Map • Population-specific Resources • Recognition of Pesticide Poisonings • Training

Output B: A number of stakeholders receiving technical assistance on the availability of pesticide-related training materials

Anticipated outcomes	Actual outcomes
Track the number of stakeholders served with technical assistance on the availability of pesticide-related training materials.	<p>Diana Simmes provided technical assistance to the Oregon Poison Center (OPC) Director regarding identifying disinfectants effective against COVID-19. The director's question was in response to a health care provider who called the OPC for guidance on disinfectants.</p> <p>Diana Simmes provided University of Iowa professor, Diane Rohlman, with pesticide exposure case studies for graduate students and medical providers taking her Rural Health course to hone their skills in designing pesticide exposure prevention interventions. Diana and Rebecca participated in the presentations as reviewers and provided feedback to the students.</p> <p>PERC-med collaborated with OEHHA to include national pesticide exposure reporting requirements for health care providers, including PERC-med's pesticide reporting map and data table, into an existing online CME-accredited course.</p> <p>PERC-med established a partnership with ATSDR to update environmental medicine clinician briefs.</p> <p>PERC-med provided public education materials and infographic of pesticides in home for potential usage in the National Nurse-led Care Consortium's Safe and Healthy Homes program.</p>

	PERC-med met with the WA Department of Health to discuss increasing exposures to disinfectant foggers. PERC-med referred colleagues to national data sources.
Track the number and nature of partnerships to apply technical knowledge in practice.	<p>PERC-med partnered with PEHSU to update a health care provider resource on pesticide exposures in children.</p> <p>PERC-med partnered with organizations to include national pesticide exposure reporting requirements for health care providers, including PERC-med's pesticide reporting map and data table, into an existing online CME-accredited course.</p> <p>Advisory Board member Dr. Catherine Karr provided consult to a pediatrician in Portland, OR regarding a 7-year-old patient who was exposed to Crossbow Industrial Strength Herbicide (via neighbor spray).</p> <p>PERC-med finalized negotiations with the North Carolina Agromedicine Institute and Eastern AHEC to provide technical assistance in revising their pesticide education courses for health care professionals.</p>

Objective 4: Develop partnerships and a sustainable network of stakeholders.

Output A: Two or more strategic meetings organized to promote the recognition, diagnosis, treatment and/or prevention of pesticide-related illness in medical practice settings

Anticipated outcomes	Actual outcomes
Track engagement in collaborative resource-prioritization, planning, development, marketing and/or evaluation.	<p>Quarter 1:</p> <p>In March 2020, PERC-med held a quarterly Advisory Board meeting to:</p> <ul style="list-style-type: none"> Score proposals submitted during the 2020 Call for Project Ideas cycle, and Review the clinical case studies from Dr. Matt Keifer from his former EPA Cooperative Agreement (Pesticide Health Effects Medical Education Database – PHEMED). <p>Advisory Board member quarterly activities include the following contributions:</p> <ul style="list-style-type: none"> Worked with PERC-med on factsheet development for health care providers on recognition, management, and prevention of pesticide exposure in children (Catherine Karr). Partnered with others to update and accredit pesticide-specific case studies in environmental medicine (Catherine Karr). Worked with PERC-med on inclusion of national pesticide exposure reporting requirements in existing online CME-accredited course for health care providers (Ouahiba Laribi) Promoted the PERC-med website and EPA's Recognition and Management of Pesticide Poisonings in spring graduate student class: Rural Health and Agricultural Medicine (Diane Rohlman) Promoted PERC-med website and EPA's Recognition and Management of Pesticide Poisonings in summer course: Agricultural Safety and

	<p>Health: The Core Course (Rural Health and Agricultural Medicine) (Diane Rohlman)</p> <ul style="list-style-type: none"> • Spring assignment: used PERC-med case studies and had students develop and present an intervention to reduce exposure. Diana Simmes and Rebecca Belloso participated in the presentations as reviewers and provided feedback to the students. (Diane Rohlman) • Dr. John Forsyth has stepped off the PERC-med Advisory Board. PERC-med is actively recruiting for a new Advisory Board member. <p>In March 2020, PERC-med met with the National Pesticide Information Center's (NPIC) Project Coordinator to discuss navigating the NPIC Product Research Online (NPRO) tool and EPA's List N to confirm disinfectant products effective against SARS-CoV-2, the virus that causes COVID-19. This was useful in providing technical assistance to the Oregon Poison Center (see Objective 1, Output D).</p> <p>In April, PERC-med provided pesticide exposure case studies from Dr. Matt Keifer's Pesticide Health Effects Medical Education Database (PHEMED) for use in a Rural Health and Agricultural Medicine university course. Graduate public health students and medical providers used the case studies to develop and present an intervention to reduce exposure. Diana Simmes and Rebecca Belloso participated in the presentations as reviewers and provided feedback to the students.</p> <p>In April, the AgriSafe Nurse Scholar Program posted the webinar hosted by Diana Simmes titled, "Pesticide Exposures and Healthcare Providers: A Webinar for the AgriSafe Network Nurse Scholar Program," along with PERC-med materials in the program's learning lab for their program participants to view.</p> <p>Quarter 2:</p> <p>In June, PERC-med held a quarterly Advisory Board meeting to:</p> <ul style="list-style-type: none"> • Provide project updates • Discuss EPA temporary guidance on PPE for agricultural pesticide handlers during COVID-19 • Promote the updated PERC-med website • Promote PERC-med's pesticide reporting map • Share the marketing consultant solicitation <p>Advisory Board member quarterly activities include the following contributions:</p> <ul style="list-style-type: none"> • Charlotte Halverson provided agricultural producers with PERC-med resources specific to information on worker protection standard and general information for employers. The resources have been a benefit to AgriSafe. • Dr. Catherine Karr reviewed Dr. Michael Yeh's outline for updated clinician brief on cholinesterase inhibitors. Dr. Karr made some suggestions on incorporating child-specific vulnerabilities/aspects, chronic exposure health concerns with highlighted data on chlorpyrifos. • Dr. Catherine Karr began reviewing information/literature to provide feedback on a new pesticide factsheet (developed by NW PEHSU with PERC-med assistance).
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	<ul style="list-style-type: none"> • Dr. Catherine Karr provided consult to a pediatrician in Portland, OR regarding a 7-year-old patient who was exposed to Crossbow Industrial Strength Herbicide (via neighbor spray). • Dr. Catherine Karr began additional focused activities on safe use of disinfectants as part of the PEHSU program, given rise in adverse incidents since COVID-19. • Dr. Ouahiba Laribi reviewed the PERC-med module for California OEHHA's Recognition, Management and Reporting of Pesticide Illness course, and facilitated module review from OEHHA public health medical officer and executive office. • Dr. Diane Rohlman promoted the PERC-med website and EPA's Recognition and Management of Pesticide Poisonings at the University of Iowa Rural Health and Agricultural Medicine summer course titled "Agricultural Safety and Health: The Core Course." Attendance included 25 people from 14 states. • Dr. James Roberts, co-author of EPA's Recognition and Management of Pesticide Poisonings, joined the PERC-med Advisory Board. • Dr. Michael Yeh, Medical Toxicology Fellow joined the Advisory Board. <p>Quarter 3:</p> <p>The December PERC-med quarterly Advisory Board meeting will be postponed to January due to schedule conflicts from the board.</p> <p>Advisory Board member quarterly activities include the following contributions:</p> <ul style="list-style-type: none"> • Dr. Catherine Karr finalized information/literature for a new pesticide factsheet co-written with Maggie Willis, RN, and Mary Kate Cardon, DNP trainee. • Dr. Ouahiba Laribi obtained module review and approval from OEHHA public health medical officer and executive office.
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Output B: A number of new partnerships developed, and existing partnerships maintained, and the number of people involved in those partnerships

Anticipated outcomes	Actual outcomes
Track the number of partnerships and achievements initiated through outreach.	PERC-med has maintained contact with national membership-based medical provider organizations, including the APHN, two AAFP Member Interest Groups, AMA, NNCC, and NEEF, with the goal of developing training opportunities and distributing resources for medical professionals.

Output C: Planning and Reporting

Anticipated outcomes	Actual outcomes
Submit quarterly reports within 30 days of the close of the quarter.	<p>This fourth quarterly report and annual report for Year 3 was submitted within 30 days of the close of the quarter by March 31, 2021.</p> <p>This quarterly report includes a summary of expenditures, purchases, and other fiscal activities; a side-by-side comparison of actual accomplishments vs. project accomplishments; proposed timelines/milestones.</p>

Difficulties and Departures

Quarter 1: Full engagement of the Advisory Board to advise on healthcare specific issues has been a challenge. PERC-med is in the process of adjusting its current Advisory Board roster to increase the number of advisers who actively treat patients, especially those from farmworker communities across multiple geographical regions.

Quarter 2: As with many other cooperative agreements, the COVID-19 global pandemic has adversely impacted PERC-med activities in Q2. Two PERC-med speaking engagements were cancelled and the pandemic presented unprecedented challenges for in-person conferences. The APHN conference is planned to now take place in April 2021. Additionally, within this landscape opportunities to engage with health care providers are being continually reframed.

Quarter 3: As with other EPA-sponsored UCD CPE cooperative agreements, the COVID-19 global pandemic has adversely affected PERC-med activities in Q3. There were administrative challenges (e.g., delay in obtaining of signatures) with the execution of the memorandum of agreement with Eastern Area Health Education Center, which shifted timelines forward (delayed) by approximately one month.

Sub-Awards, Contracts, and Other Agreements

As part of its project proposal, UCDE named Oregon State University as a collaborator and therefore was not required to compete this sub-award further. Kaci Buhl serves as the Principal Investigator. The total for Project Year 2020 (Year 3) was budgeted at \$50,000. Invoices for Q1-3 amount to \$34,884.97. We have not yet received an invoice from OSU for Q4 but we will report the amount in the reporting table once we receive the invoices for those and they have cleared the accounting ledgers.

In October 2020, UCD CPE contracted with the Eastern Area Health Education Center (EAHEC), which has an existing independent collaboration with the North Carolina Agromedicine Institute, to develop and produce two pesticide medical education modules and obtain accreditation for continuing medical and continuing nursing education credit. This \$14,050 contract with AHEC will provide technical assistance and revisions for two pesticide education courses targeted to health care providers.

Table 3: Annual Budget Expenditures – Project Year Three (2020)**March 1, 2020 – February 28, 2021**

	Q1	Q2	Q3	Q4	Cumulative	Amended Budget from page 18	% Used of Amended
Project Year Three (2020)							
A. Personnel	\$32,555	\$33,561	\$35,321	\$30,074	\$131,511	\$256,634	51.24%
B. Benefits	\$18,122	\$17,563	\$18,907	\$11,430	\$66,022	\$141,200	46.76%
C. Travel	\$0	\$420	\$0	\$0	\$420	\$11,355	3.70%
D. Equipment	\$0	\$0	\$0	\$0	\$0	\$0	--
E. Program Supplies	\$51	\$71	(\$3)	\$0	\$119	\$3,956	3.01%
F. Contractual	\$0	\$0	\$0	\$13,247	\$13,247	\$109,933	12.05%
G. Construction	\$0	\$0	\$0	\$0	\$0	\$0	--
H. Other	\$0	\$0	\$0	\$0	\$0	\$111,052	0%
H. Other (indirect exempt)	\$0	\$0	\$23,478	\$11,407	\$34,885	\$105,465	33.08%
Total Direct Costs	\$50,728	\$51,615	\$77,703	\$66,158	\$246,204	\$739,594	33.29%
Total Modified Direct Costs (MTDC)	\$50,728	\$51,615	\$54,225	\$54,750	\$211,318	\$659,128	32.06%
I. Indirect Costs	\$25,364	\$25,807	\$27,113	\$27,375	\$105,659	\$344,510	30.67%
Total Expenses:	\$76,092	\$77,422	\$104,816	\$95,533	\$383,863	\$1,084,104	32.64%

Resources used in Q1-4 amount to approximately \$383,863 representing 32.64% of the amended award amount for Project Year Three. Additional direct expenses will continue to post after Quarter 4 (such as the OSU Q4 invoice) and will be reflected in subsequent drawdowns and an amended annual report.

PERC-med plans to expeditiously utilize the balance of resources in Project Years Four and Five. Posted [on the website](#) is a partial list of projects for Year Four. In April 2021, PERC-med will launch a call for project ideas for Years Four and Five. Projects prioritized by the Advisory Board will be added to the website and the balance of resources will be used to carry out this robust list of projects aimed at helping to educate the medical community on how to prevent, recognize, and treat pesticide-related health conditions.